Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

CF Industries Inc.
Donaldsonville Nitrogen Complex
Donaldsonville, Ascension Parish, Louisiana
Agency Interest Number: 2416
Activity Number: PER20040002
Proposed Permit Numbers: 0180-00004-V2, PSD-LA-594 (M-1)

I. APPLICANT

Company:
CF Industries Inc
PO Box 468
Donaldsonville, LA 70346-0468

Facility:
39018 Hwy 3089
(3 Mi from Sunshine Bridge)
Donaldsonville: Ascension Parish, Louisiana
The approximate UTM coordinates are 696.9 kilometers East, 3331.3 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

The Donaldsonville Nitrogen Complex produces the nitrogen based compounds ammonia, granular urea, and urea ammonium nitrate (UAN). Production starts with the manufacture of ammonia. Ammonia is used to produce urea, nitric acid, and ammonium nitrate (AN). Urea solution and ammonium nitrate are mixed to form UAN solution.

The existing permitted facility consists of four ammonia plants, three granular urea plants, one urea solution plant, three nitric acid plants, two AN neutralization units, and two UAN plants. Current permitted production capacity is 2.409 MM tpy of ammonia, 2.765 MM tpy of urea, 849,000 tpy of nitric acid (expressed as 100% nitric acid), 1.087 MM tpy of AN, and 2.415 MM tpy of UAN.

Ammonia Production

Ammonia is formed from air, water, and natural gas in a series of process steps. Production capacity increased as a result of debottlenecking under Permit No. 0180-00004-06, by 56,000 tpy of ammonia, and by another 232,600 tpy under Permit No. 0180-00004-07.
Initially, air is filtered and compressed to 600 psig, water is clarified and demineralized, and natural gas is desulfurized. Steam and natural gas are reformed in a catalytic reactor furnace to hydrogen and carbon oxides (1500°F, 500 psig, nickel catalyst). Unreacted gases go to the secondary reformer, compressed air is added, and further reaction occurs.

The reformed gases are purified by high and low temperature shift converters, which lower carbon monoxide (CO) levels and generate more hydrogen by converting CO to carbon

dioxide (CO_2). The CO_2 is removed from the process gas in an absorber column by passing it through an alkanol amine solution. Trace quantities of carbon oxides are reacted to methane in the methanator. Steam strippers remove CO_2 from the alkanol amine solution. About 80% of the CO_2 produced in the ammonia plants is used as feed for urea production; the rest is vented or sold.

The purified process gas, now a 3 to 1 mixture of hydrogen and nitrogen known as synthesis gas, is compressed to 2,300 psig by a steam-driven, centrifugal compressor and circulated through an ammonia converter. Approximately 13% reacts to form ammonia. A refrigeration system condenses the ammonia out of the synthesis loop gas stream that is then recycled. A "warm" ammonia stream (56°F) is sent as feed material to the urea, nitric acid, and AN production or to the product pipeline. A "cold" ammonia liquid (-28°F) is sent to storage.

The Low Pressure Purge Gas Recovery Unit (LPPGRU) removes ammonia from the low-pressure purge gas streams used as fuel in the ammonia plant reformers. Recovered ammonia is recycled, reducing the amount combusted. This recycled ammonia reduces the NO_X emitted from the reformer stack, from 500-ppm average to 150-ppm average. For approximately 5 days per year, however, the LPPGRU is shutdown for maintenance. Under an alternate operating scenario, the LPPGRU is bypassed and the process gas is routed as it was originally configured, directly to the reformers. The NO_X reduction associated with Ammonia Plant No. 3, (416.0 tpy based on 1989/1990 production), was used as offsets for the new UAN No. 1 project.

Ammonia process condensate is steam stripped to meet effluent standards. Prior to 1986, stripper overhead streams were added to flue gas for Ammonia Plants Nos. 3 & 4 reformers. Stripper overhead is now condensed; with noncondensibles venting to the reformer stacks and condensed liquids routing to a condensate surge drum prior to recycle through a KTI feed saturator unit into the feedstock for Ammonia Plants Nos. 1 & 2.

Permit No. 0180-00004-06 dated May 19, 1997, authorized a debottlenecking project for Ammonia Plants Nos. 3 & 4. An increase in production capacity, by approximately 28,000 tpy per plant, and an improvement in fuel efficiency, by about 0.6 MM BTU/ton of product, resulted from the project.

Modifications increased capacities of the synthesis gas compressors and purge gas recovery system, upgraded ammonia converters and cooling towers, and changed piping. Additional electric-driven, ammonia refrigeration compressors at the dock area were not constructed.

Under Permit No. 0180-00004-07, dated March 25, 1998, debottlenecking of Ammonia Plants Nos. 1 & 2 similar to the Ammonia Plants Nos. 3 & 4 project resulted in an increase in production capacity, approximately 116,300 tpy per plant, and an improvement in fuel efficiency of about 1.4 MM BTU/ton of product.

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Urea Production

Urea, manufactured from ammonia and CO_2, can be granulated to produce a solid fertilizer or left in solution to be used as feed in UAN production. Capacity increased with the addition of the Urea Plant No. 4 under Permit No. 0180-00004-05 (PSD-LA-594), located on the west side of the existing complex and incorporating more up-to-date technology for emissions control.

Liquid ammonia and gaseous carbon dioxide are mixed at 2,200 psig in a condenser to form ammonium carbamate that is sent to a reactor where half is converted to urea and water. Ammonia and carbon dioxide are produced from the unconverted carbamate in a high-pressure stripper and routed back to the condenser along with make-up ammonia, CO_2, and ammonium carbamate solution recycled from the high-pressure scrubber.

Urea solution from the stripper flows to the rectifying column. Ammonia and CO_2 are removed from the urea solution. Water is removed from the purified urea solution by vacuum evaporation to produce a concentrated urea melt.

Granular Urea Production

In Urea Plants Nos. 1, 2, & 4, the concentrated urea melt goes through a granulization step. UF-85, a urea-formaldehyde concentrate additive, is injected into the molten urea prior to granulation, reacting with it to make the solid product dust free.

In Urea Plants Nos. 1 & 2, urea melt is sprayed inside granulation drums onto a moving bed of urea granules. The granules are removed and screened to the desired size and conveyed to a urea bulk warehouse. Cooling air from the granulation drums is passed through scrubbers before venting.

In Urea Plant No. 4, urea melt is sprayed inside the granulator onto a fluidized bed of urea granules. Granules are removed, screened to the desired size, cooled, and stored in a urea bulk warehouse. Fluidization air from the granulator and cooling air are scrubbed before venting. Emissions associated with the granular urea production include natural gas combustion emissions from the plant boiler, ammonia emissions from a low-pressure absorber, and process discharge to the urea stack. Ammonia emissions, along with particulate emissions, are released from the granulator scrubbers. Scrubber water is recycled to the process. Formaldehyde emissions from the UF-85 Tanks are scrubbed before venting. The effluent liquid is recycled with the granulator solution.

Hydrogen contamination is removed from CO_2 feedstock for Urea Plants Nos. 1 & 2 by the catalytic reaction of hydrogen and oxygen to form water. This reduces the gas load, primarily hydrogen and nitrogen, to the control equipment and allows greater contact between the ammonia, vented along with these gases, and the scrubbing medium. More ammonia is therefore removed.

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An impingement wet scrubber on the new granulator of Urea Plant No. 4 constitutes Best Available Control Technology (BACT) for significant PM_{10} emissions permitted under PSD-LA-594, dated April 29, 1996. The scrubber returns a 45% urea solution to the process for concentrating into urea melt.

Urea Solution Production

Urea Plant No. 3 has no granulation capability. It supplies the urea solution for UAN production. Urea solution for UAN production is also obtained, prior to the granulation step, from Urea Plant No. 4 and can be obtained from Urea Plant No. 2. Process steps in the plants are the same up to the evaporation step of granulation. Urea solution is processed through a flash tank then directed to the UAN mix tank.

Urea Plant No. 3 vent gases, from the urea reactor and the urea solution flash tank, are fed to the AN unit to provide the ammonia feed for the neutralizer and lower ammonia emissions from the urea solution process.

Urea Ammonium Nitrate (UAN) Production

UAN production starts by making nitric acid from ammonia, air, and water. The nitric acid is reacted with ammonia to form ammonium nitrate (AN). Ammonium nitrate is then combined with urea solution to form urea ammonium nitrate.

UAN No. 1 solution production replaced the old UAN No. 1. It consists of Nitric Acid Plants Nos. 1 & 2 and Ammonium Nitrate/UAN No. 1 unit. Urea solution is supplied by Urea Plant No. 3 and, optionally, by Urea Plant No. 2 prior to the granulation step.

UAN No. 2 was authorized under Permit No. 0180-00004-05 (PSD-LA-594) at 1.095 MM tpy of UAN production capacity. It consists of the 383,250 tpy Nitric Acid Plant No. 3 and Ammonium Nitrate/UAN No. 2 unit. Urea solution is supplied by Urea Plant No. 4, prior to the granulation step. These new units, located on the west side of the existing complex, are similar to the existing plants, but incorporate more up-to-date technology for emissions control.

Nitric Acid Production

Production of nitric acid is initiated by converting anhydrous ammonia to a vapor at 150°F. Compressed air and gaseous ammonia are mixed and reacted over a platinum-rhodium gauze at 1625°F to produce nitrogen oxides (NO_X). The NO_X gas is cooled in the waste heat boiler and sent to the absorption tower where NO_X is absorbed in water to produce nitric acid.

Nitric Acid Plants Nos. 1 & 3 are dual pressure processes. NO_X is produced at 60 psig and the acid reactions in the absorption tower take place at 160 psig.

Nitric Acid Plant No. 2 employs a single pressure process. The air and gaseous ammonia streams are reacted and the resultant NO_X is absorbed at a pressure of about 130 psig.

Plant No. 1 absorber provides NO_X abatement through extended absorption. Plants No. 2 and No. 3 use catalytic abatement units to reduce NO_X emissions exiting the absorber to less than 225 ppm in No. 2 and less than 210 ppm (105 ppm average by plant operation experience) in No. 3.

Ammonium Nitrate/UAN Production

Ammonium nitrate (AN) is generated by combining nitric acid and ammonia feed in a neutralizer. In the UAN No. 1 plant, vent gases from the urea reactor and the urea solution flash tank of Urea Plant No. 3 provide the ammonia feed to the ammonium nitrate neutralizer. After reaction, the AN solution flows into the UAN mixing tank with urea solution and forms UAN. The UAN solution is cooled, adjusted for optimum pH, and pumped to storage.

Complex II Pipeline Flare is an intermittent source for clearing equipment prior to maintenance. Another flare was added at the pipeline injection station because of the decreased mobility of this flare.

PSD Permit PSD-LA-594 was issued on April 29, 1996 to the complex. This modification incorporates provisions associated with BACT controls for two cooling towers not included in the original PSD analysis. The PSD permit is being modified concurrently with this renewal.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire was submitted by CF Industries, Inc. on September 2, 2004 requesting a renewal and minor modification to the Part 70 operating permit. Additional information dated March 30, 2006, July 31, 2006 and October 13, 2006 was also received.

Project

In this modification, CF Industries, Inc. proposes to adjust the annual production rate up to the capacity of the unit for the No. 3 Nitric Acid Plant and No. 2 Urea Ammonia Nitrate (UAN) Plant. Therefore, the Nitric Acid production will increase from the currently permitted 849,000 tpy up to a new production rate of 903,750 tpy. The UAN production is based on AN production which is increasing from 1086.75 M tpy to a new production rate of 1148.435 M tpy. Thus the UAN production is increasing from 2.415 MM tpy to 2.552 MM tpy. As part of the permitting effort, CF will lower the permitted emission factor used in the calculation of emissions from the No. 3 Nitric Acid Plant Absorber Stack (Emission Point 4-95) based on actual NO_X Continuous Emissions Monitoring (CEMs) data on the unit. There will be no change in emissions of NO_X from the No. 3 Nitric Acid Plant Absorber Stack.
In addition, this modification incorporates an emissions reduction project for ammonia, as well as several administrative changes as follows:

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1. The No. 1 Nitric Acid Plant Fugitives (Emission Point 35-75) were included in the permit with authorized ammonia emissions of 1.6 tpy. Due to an administrative error, this incorrect value was included in the permit. It shall be corrected to 0.8 tpy as indicated by the average pound per hour value.

2. The No. 2 Nitric Acid Plant Fugitives (Emission Point 9-91) were included in the permit with authorized ammonia emissions of 1.6 tpy. Due to an administrative error, this incorrect value was included in the permit. It shall be corrected to 0.8 tpy as indicated by the average pound per hour value.

3. The No. 3 Nitric Acid Plant Fugitives/No. 2 UAN Fugitives (Emission Point 12-95) were included in the permit with authorized ammonia emissions of 1.6 tpy. Due to an administrative error, this incorrect value was included in the permit. It shall be corrected to 0.8 tpy as indicated by the average pound per hour value.

4. Updates to the No. 2 Urea UF-85 Storage Tank (Emission Point 2-92) emissions reflect the correction of the tank capacity from 47,000 gallons to 33,750 gallons, the conversion from calculating emissions using TANKS Version 3.1 to Version 4.0, and inclusion of additional Material Safety Data Sheet (MSDS) composition and vapor pressure data. There is no physical modification being made to this source. Previously, the tank was permitted to emit 0.02 lb/hr and 0.075 tpy of formaldehyde (conservatively reporting all volatile organic compound (VOC) emissions as formaldehyde). Calculations were updated and emissions have been included in the application as 0.01 lb/hr and 0.05 tpy total VOC, 0.0003 lb/hr and 0.001 tpy formaldehyde, and 1.6×10^{-6} lb/hr and 7.0×10^{-6} tpy methanol.

5. Modify Table 3 of the regulatory applicability tables in the application for the No. 3 Urea Boiler (Emission Point 1-91) and the No. 4 Urea Boiler (Emission Point 10-95) to include verbiage from the revisions made on February 18, 1999 to 40 CFR 60 Subpart Db (40 CFR 60.49b(h) and (s)). The revisions made on February 18, 1999 require excess emissions reporting as per 60.49b(h) and reporting of data required under this Subpart to be submitted semiannually as per 60.49b(s).

6. The facility requested the deletion of the requirement of State Only Specific Condition No. 8 from the facility's Title V Operating Permit (Permit No. 0180-00004-V0) as it applies to the No. 1 Ammonia Plant Hot Vent (Emission Point 2-65), the No. 2 Ammonia Plant Hot Vent (Emission Point 2-67), the No. 3 Ammonia Plant Hot Vent (Emission Point 4-75), the No. 4 Ammonia Plant Hot Vent (Emission Point 7-75), the No. 1 Ammonia Plant Process Gas Vent (Emission Point 10-65), the No. 2 Ammonia Plant Process Gas Vent (Emission Point 7-67), No. 3 Ammonia Plant Process Gas Vent (Emission Point 39-75), and the No. 4 Ammonia Plant Process Gas Vent (Emission Point 40-75). The facility states that the condition is not appropriate for high hydrogen

concentration sources. The flares are not subject to any New Source Performance Standards. The requirement will remain as a State Only policy requirement.

7. The facility requested the deletion of the requirement of State Only Specific Condition No. 8 from the facility's Title V Operating Permit (Permit No. 0180-00004-V0) as it applies to the Complex I NH_3 Flares (Emission Points 4-65 and 15-65), the Complex II NH_3 Flare (Emission Point 22-75), the Complex II Urea/UAN NH_3 Flare (Emission Point 47-75), the Complex II Pipeline Flare (Emission Point 3-92), and the Ammonia Flare (Emission Point 17-95). The flares at the facility are not subject to any New Source Performance Standard; but, the requirement will remain as a State Only policy requirement.

8. Change the nomenclature in the applications Table 3 regulatory applicability tables for the No. 1 UAN Plant/No. 2 AN Neutralizer Vent (Emission Point 2-91) to reflect the source description used throughout the permit. The emission point should be described as the No. 1 UAN Neutralizer Vent.

9. Modify the applications Table 3 regulatory applicability tables for the Complex II Gasoline Storage Tank (Emission Point 26-75) to reference LAC 33:III.H.3 instead of LAC 33:III.H.3.a.

10. Updates to the No. 1 Ammonia Plant Sulfuric Acid Receiving Tank (Source 12-65), the No. 2 Ammonia Plant Sulfuric Acid Receiving Tank (Source 8-67), the Nos. 3 and 4 Ammonia Plants Sulfuric Acid Receiving Tank (Source 48-75), the No. 1 Urea Sulfuric Acid Receiving Tank (Source 56-75), the Complex II Effluent Pond Sulfuric Acid Tank (Source 1-78), and the No. 4 Urea Sulfuric Acid Receiving Tank (Source 18-95) emissions reflect the reconciliation of actual tank capacities. In addition, two existing tanks (the No. 2 Nitric Acid Sulfuric Acid Receiving Tank (Source 1-93) and the No. 2 Urea Sulfuric Acid Receiving Tank (Source 1-76)), which were not included in the original Title V permit application, have been added to this minor permit modification. The emissions from the Sulfuric Acid Day Tanks (Source 14-65) have been reconciled to include the correct number of day tanks located at the facility. The emissions from these sources are negligible and the overall emissions of sulfuric acid from the facility have decreased as a result of these reconciliations (0.0004 tpy to <0.0001 tpy). There are no physical modifications being made to these sources.

11. PSD permit PSD-LA-594 was issued to CF Industries on April 29, 1996 to construct the No. 4 Urea Plant, the No. 3 Nitric Acid Plant, and the No. 2 Urea Ammonium Nitrate plant. Part of the original design and construction included two cooling towers, one for the No.3 Nitric Acid Plant and the second for the No. 4 Urea Plant. The changes required that BACT controls be reviewed for particulate emissions from these two sources, but that review was not previously performed. This modification incorporates the results of that

review from PSD Permit PSD-LA-594 (M-1). There are no physical modifications being made to these sources.

12. The Regulatory Requirements Table 2 - Explanation for Exemption Status or Non-Applicability of a Source has been updated to incorporate revisions to the facility wide Miscellaneous Organic Chemical Manufacturing (MON) NESHAP Subpart FFFF and to add the Boiler and Process Heater MACT, NESHAP Subpart DDDDD.

13. The emissions of Carbon Monoxide for the No. 4 Urea Boiler (Emission Point 10-95) have been updated to reflect more accurate values.

14. This modification incorporates applicable specific requirements for Compliance Assurance Monitoring (40 CFR 64) which is now applicable at this first Part 70 operating permit renewal.

Proposed Permit

Permit 0180-00004-V2 will be renewal and minor modification of the Part 70 operating permit for the Donaldsonville Nitrogen Complex.

Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	720.48	707.30	-13.18
SO_2	11.27	12.92#	+1.65
NO_X	4442.68*	4457.15*	+14.47
CO	1595.97	1560.06	-35.91
VOC	264.16	258.21	-5.95
Non - VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):			
Ammonia	3835.45**	3836.75**	+1.30
Nitric Acid	2.52	2.72	+0.20
Chlorine	0.50	1.20	+0.70
Sulfuric Acid	<0.0001	<0.001	-
Sulfur	1.04	0.00	-1.04

* Contains 81.60 tpy from alternate operating scenarios.
** Includes Startup and Shutdown emissions from 3-95 - No. 4 Urea Vent (X-101)
# Emissions decrease to 11.27 tpy as low sulfur diesel fuel becomes mandatory for EQT 112.

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VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Benzene	0.002	0.009	+0.007
Ethyl benzene	0.0003	0.001	+0.0007
Methanol	131.30	136.61	+5.31
n-Hexane	0.003	0.013	+0.10
Toluene	0.003	0.01	+0.007
Xylene	0.004	0.004	-
Polynuclear Aromatic Hydrocarbons	Not Reported	<0.001	+<0.001
Formaldehyde	0.046	0.005	-0.041
Total			

Other VOC (TPY): 121.56

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

The facility has three nitric acid trains. All three are applicable to 40 CFR 60 Subpart G and thus are not subject to LAC 33:III.2307, Emission Standards for the Nitric Acid Industry.

The No. 4 Urea plant fugitives are subject to 40 CFR 60, Subpart VV. The No. 1 and 2 Urea Plant fugitives are not subject to the regulation as the equipment was built and operated before the applicability date of the NSPS. The No. 3 Urea plant fugitives are exempt per 40 CFR 60.480(d).

Prevention of Significant Deterioration/Nonattainment Review

PSD permit PSD-LA-594 was issued to CF Industries on April 29, 1996 to construct the No. 4 Urea Plant, the No. 3 Nitric Acid Plant, and the No. 2 Urea Ammonium Nitrate plant. Part of the original design and construction included two cooling towers, one for the No.3 Nitric Acid Plant and the second for the No. 4 Urea Plant. The changes required that BACT controls be reviewed for particulate emissions from these two sources, but that review was not previously performed. This modification incorporates the results of that review from PSD Permit PSD-LA-594 (M-1). There are no physical modifications being made to these sources.

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PSD permit PSD-LA-594 (M-1) is proposing that based on the technical and environmental considerations, the Best Available Control Technology for the increases of PM_{10} associated with the two cooling towers, (Emission Points 20-95 and 21-95) is the use of drift eliminators and proper operation of the sources. Although not considered at the time of construction to be particulate matter emitters, the cooling towers have used drift eliminators since the first day of operation and good operating practices are followed.

The facility is located within the Baton Rouge non-attainment area and is therefore subject to LAC 33:III.Chapter 22, Control of Emissions of Nitrogen Oxides. The facility has nine emission sources that are subject to the regulation and has elected to operate under a Facility-wide Averaging Plan. The plan was approved on April 18, 2005.

Streamlined Equipment Leak Monitoring Program

The facility has no streamlined equipment leak monitoring program.

Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
Donaldsonville Nitrogen Complex			

MACT Requirements

The facility has three tanks which contain UF-85. This material makes those affected units to be subject to NESHAP Subpart FFFF. The facility will comply with applicable heavy liquid requirements of NESHAP Subpart FFFF prior to the compliance date of May 10, 2008. The specific requirements are designated in the permit specific requirements report as Phase IV conditions. These three same tanks are subject to a state MACT determination as approved by DEQ on July 14, 1994, under Certification of Compliance No.: CC92034. Requested potential Formaldehyde emissions from tanks 7-72, 2-92, and 6-95 exceeded the minimum emission rate of 260 lbs per year in 1998, requiring a MACT analysis of the emission controls. The existing scrubbers with an 80% efficiency were determined to be MACT and approved on February 3, 1998. The storage tanks and equipment leak components are affected sources in NESHAP Subpart FFFF and thus, are exempt from NESHAP EEEE per §63.2338(c)(1). The facility transfer operations do not meet definition of transfer rack in §63.2406.
The facility also has equipment that is subject only to the initial notification of 40 CFR 63 Subpart DDDDD. The initial notification dated December 8, 2004 was submitted to EPA and received by LDEQ on December 10, 2004.

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Air Quality Analysis

Dispersion Model(s) Used: ISC-PRIME (NH_3)

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Air Quality Standard (NAAQS)
Ammonia	8-hour	526* ug/m^3	640 ug/m^3

* Maximum off property concentration including all CF Industries sources.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed air permit briefing sheet.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

No permit shield has been requested

VI. PERIODIC MONITORING

Federal regulation 40 CFR 64 Compliance Assurance Monitoring is applicable to this facility. Applicability for each pollutant, requires that the unit be subject to an emission limitation or standard and must use a control device to achieve compliance. Each of the four ammonia plant hot vents has the potential to emit uncontrolled carbon monoxide greater than the major source quantity. The CAM rule as applied to this facility states that if any of the vents is a major source after control (emits 100 tpy or more of CO), then monitoring shall take place at a minimum of four times per hour, else at least daily monitoring. Since none of the vents emit greater than 100 tpy, daily monitoring of the flame is the minimum requirement from the regulations. However, these vents do not emit on a constant basis but only upon an as needed basis to control pollutant releases through a flare. The periodic monitoring shall consist of the presence of a flame monitored by heat sensing device upon occurrence of each event. The facility is allowed to use either the installed thermocouple or the infrared sensor or by visible observation to monitor the presence of the flame every fifteen minutes while the process gas is routed for combustion during Startup conditions. Exceedance of the emission limits shall be reported to the Office of

Environmental Compliance, Enforcement Division in accordance with 40 CFR Part 70 General Condition R. The facility also has eight urea granulator scrubbers that are used to control particulate matter emissions. The periodic monitoring shall consist of daily monitoring of the flow to the scrubber and a daily observation that the opacity from the exhaust stack is in compliance with the 20% opacity limitation of LAC 33:III.1311.C.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards

(NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.